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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cynthia L. Recker

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EXAMINER

DAY, HERNG DER

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/654,253

Applicant(s)

RECKER ET AL.

Examiner

Herng-der Day

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to Applicants' Amendment ("Amendment") to Office Action dated December 16, 2005, faxed March 16, 2005.

1-1. Claims 1 and 10 have been amended. Claims 1-20 are pending.

1-2. Claims 1-20 have been examined and rejected.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michael et al., "Statistical Modeling of Device Mismatch for Analog MOS Integrated Circuits", IEEE Journal of Solid-State Circuits, Volume 27, Issue 2, February 1992, pages 154-166, in view of Burrows et al., U.S. Patent 6,397,117 B1 issued May 28, 2002, and filed May 28, 1998.

3-1. Regarding claim 1, Michael et al. disclose a mismatch modeling tool comprising:

a software implemented transistor mismatch model ("SITMM") (page 155, section II.A. Parameter Variance Model);

at least one editable mismatch model data library comprising process parameter variables accessed by said SITMM (page 161, section III.B. Parameter Extraction; based on a given set of processing-dependent model fitting parameters, page 165, left column, paragraph 3);

a circuit simulation library and program data output accessed by said SITMM (page 162, section III.C. Simulation); and

a graphical interface to said SITMM (Integration of this statistical model into a CAD environment, page 165, left column, paragraph 3).

Michael et al. fail to expressly disclose the graphical interface having a plurality of string-of-data input parameter fields to provide a plurality of input parameter data strings to the SITMM for generating results for at least one mismatch parameter over the plurality of input parameter data strings, wherein the mismatch modeling tool is configured for utilization via a web interface. Nevertheless, Michael et al. have disclosed integrating the model into a CAD environment. Furthermore, in the CAD environment, using graphical interface to facilitate data input and output for different applications or scenarios is considered to be well known for those skilled in the relevant art. In other words, it is well known that for a CAD environment one of ordinary skill in the art knows at least how to design input method (e.g., menu driven selection), input format (e.g., textual or numerical coded information), and output method/format (e.g., graphical display or output file).

Burrows et al. disclose a distributed CAD system to provide significant advantages (listed at lines 18-44 of column 2) over the conventional CAD approach (disadvantages listed at lines 30-55 of column 1). Specifically, The CAD client stations include display and data entry facilities for displaying a design parameter entry document to a user and for accepting design parameters entered by the user, as well as a communications interface for transmitting entered design parameters via the communications medium to the server station. Each client station also includes a workstation with a web browser capability (Abstract). As shown in figures 2 and 5,

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for example, a plurality of string-of-data input parameter fields are provided for user to input and/or select.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Michael et al. to incorporate the teachings of Burrows et al. to obtain the invention as specified in claim 1 because, as suggested by Burrows et al., a distributed CAD system would provide significant advantages over the conventional CAD approach.

3-2. Regarding claim 2, Michael et al. further disclose wherein said graphical interface comprises a menu driven modeled device selection frame (for example, three device sizes are shown in Fig. 8 at page 161; using menu driven selection frame to select different device model to generate simulated result as shown in TABLE III at page 163 is well known for those skilled in the relevant CAD art; for example, Burrows et al. disclose menu driven selection frame in FIG. 5).

3-3. Regarding claim 3, Burrows et al. further disclose wherein said menu driven modeled device selection frame configures said software implemented transistor mismatch model to display a dynamically generated input data frame within said graphical interface ("forms" for defining parameters, column 4, lines 33-49).

3-4. Regarding claim 10, Michael et al. disclose a mismatch modeling tool comprising:

a software implemented transistor mismatch model ("SITMM") (page 155, section II.A. Parameter Variance Model);

at least one editable mismatch model data library comprising process parameter variables accessed by said ("SITMM") (page 161, section III.B. Parameter Extraction; based on a given set of processing-dependent model fitting parameters, page 165, left column, paragraph 3);

a circuit simulation library and program data output accessed by said ("SITMM") (page 162, section III.C. Simulation); and

a graphical interface to said SITMM (Integration of this statistical model into a CAD environment, page 165, left column, paragraph 3).

Michael et al. fail to expressly disclose the graphical interface having at least one field for receiving sets of data for a plurality of mismatch input parameters and providing the sets of data to the SITMM to generate mismatch output data based on the sets of mismatch input data, wherein the mismatch modeling tool is configured for utilization via a web interface.

Nevertheless, Michael et al. have disclosed integrating the model into a CAD environment. Furthermore, in the CAD environment, using graphical interface to facilitate data input and output for different applications or scenarios is considered to be well known for those skilled in the relevant art. In other words, it is well known that for a CAD environment one of ordinary skill in the art knows at least how to design input method (e.g., menu driven selection), input format (e.g., textual or numerical coded information), and output method/format (e.g., graphical display or output file).

Burrows et al. disclose a distributed CAD system to provide significant advantages (listed at lines 18-44 of column 2) over the conventional CAD approach (disadvantages listed at lines 30-55 of column 1). Specifically, The CAD client stations include display and data entry facilities for displaying a design parameter entry document to a user and for accepting design

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parameters entered by the user, as well as a communications interface for transmitting entered design parameters via the communications medium to the server station. Each client station also includes a workstation with a web browser capability (Abstract). As shown in figures 2 and 5, for example, a plurality of input parameter fields are provided for user to input and/or select.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Michael et al. to incorporate the teachings of Burrows et al. to obtain the invention as specified in claim 10 because, as suggested by Burrows et al., a distributed CAD system would provide significant advantages over the conventional CAD approach.

4. Claims 4-6, 8-9, and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Michael et al., "Statistical Modeling of Device Mismatch for Analog MOS Integrated Circuits", IEEE Journal of Solid-State Circuits, Volume 27, Issue 2, February 1992, pages 154-166, and Burrows et al., U.S. Patent 6,397,117 B1 issued May 28, 2002, and filed May 28, 1998, in view of Applicants' admission.

4-1. Regarding claims 4-6 and 8-9, Michael et al. and Burrows et al. disclose a mismatch modeling tool in claim 3. However, Michael et al. fail to expressly disclose the format used in the input/output interface for at least one of a plurality of input scenarios.

Applicants have admitted at page 5, lines 8-10, "The mismatch tool 10 further comprises the data input and data output interfaces that may be comprised of any data interface method or system". Also, at pages 8-9, Applicants have admitted programming changes for added new technologies, for example, make the technology available on the pull down menus, may be accomplished in a variety of methods by those skilled in the art. Furthermore, at page 7, lines 7-

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9, Applicants have admitted, “The five scenarios above are presented as examples of scenarios popular with those skilled in the art”.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Michael et al. and Burrows et al. to incorporate the admission of Applicants to obtain the invention as specified in claims 4-6 and 8-9 because in the CAD environment using graphical interface to facilitate data input and output for popular applications or scenarios is considered to be well known for those skilled in the relevant art.

4-2. Regarding claims 11-20, Michael et al. and Burrows et al. disclose a mismatch modeling tool in claim 10. However, Michael et al. fail to expressly disclose the format used in the input/output interface for at least one of a plurality of input scenarios and related input parameters.

Applicants have admitted at page 5, lines 8-10, “The mismatch tool 10 further comprises the data input and data output interfaces that may be comprised of any data interface method or system”. Also, at pages 8-9, Applicants have admitted programming changes for added new technologies, for example, make the technology available on the pull down menus, may be accomplished in a variety of methods by those skilled in the art. Furthermore, at page 7, lines 7-9, Applicants have admitted, “The five scenarios above are presented as examples of scenarios popular with those skilled in the art”.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Michael et al. and Burrows et al. to incorporate the admission of Applicants to obtain the invention as specified in claims 11-20 because in the

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CAD environment using graphical interface to facilitate data input and output for popular applications or scenarios is considered to be well known for those skilled in the relevant art.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Michael et al., "Statistical Modeling of Device Mismatch for Analog MOS Integrated Circuits", IEEE Journal of Solid-State Circuits, Volume 27, Issue 2, February 1992, pages 154-166, Burrows et al., U.S. Patent 6,397,117 B1 issued May 28, 2002, and filed May 28, 1998, and Applicants' admission, in view of Hussey, U.S. Patent 5,826,269 issued October 20, 1998.

5-1. Regarding claims 7, Michael et al. disclose a mismatch modeling tool in claim 6. However, Michael et al. fail to expressly disclose the output data file is an emailed ASCII output data file.

Hussey discloses an electronic mail interface that provides an efficient networked system that processes user requests submitted to a network server, the results of which are typically viewed at a later time in order to facilitate task scheduling by the server of user requests from connected client computers in a network, and thereby reduce the incidence of system bottlenecks that may rise with a server (column 3, lines 29 through column 4, line 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Michael et al., Burrows et al., and Applicants' admission to incorporate the teachings of Hussey to obtain the invention as specified in claim 7 because it will facilitate task scheduling and thereby reduce the incidence of system bottlenecks.

Applicants' Arguments

6. Applicants argue the following:

(1) “A key feature of the present invention as recited by claims 1 or 10 is that it is facilitated by a web interface, e.g. a browser or like interface; rather than being implemented in a computer aided design (CAD) environment, e.g., such as discussed in Michael et al (abstract; page 163, last paragraph)” (page 9, paragraph 5, Amendment).

(2) “The present invention also allows for a plurality of input parameter data or a range of data, which is not contemplated by Michael et al (see graphical interface definition of claim 1 or claim 10)” (page 10, paragraph 1, Amendment).

(3) “Any results from Michael et al are applicable to a single combination of device size and spacing and electrical bias conditions” (page 10, paragraph 2, Amendment).

(4) “pre-defined sub-circuit blocks or scenarios are provided to the user in a streamlined web interface, as recited, e.g., in claims 2, 3, 4, 5” (page 11, paragraph 2, Amendment).

(5) “Unlike the Michael et al approach, multiple device geometries and electrical bias conditions can be input to this invention in a single execution (as generally recited in claim 1 and more specifically defined in claim 5)” (page 11, paragraph 3, Amendment).

(6) “The Examiner does not address the plurality of input parameter data fields, etc. as recited by the independent claims and which, as discussed above, are a key difference between the present invention and Michael et al.” (page 12, paragraph 1, Amendment).

(7) “these comments do not show or suggest taken alone or together with Michael et al, all of the features (e.g., specifics of the graphical interface) of any one of the claims” (page 12, paragraph 2, Amendment).

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(8) “Hussey and Michael et al. whether taken alone or together do not show or suggest the features that are missing from Michael et al and thus claim 1 and at least by virtue of dependency claim 7 should be allowable over this combination of references” (page 13, paragraph 3, Amendment).

Response to Arguments

7. Applicants’ arguments have been fully considered.

7-1. Applicants’ arguments (1), (4), (6), and (8) are moot in view of the new grounds of rejection. The rejections of claims 1-20 under 35 U.S.C. 103(a) in Office Action dated December 16, 2005, have been withdrawn.

7-2. In response to Applicants’ arguments (2) and (3) against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Please refer to the above rejections.

7-3. In response to Applicants’ argument (5) that the references fail to show certain features of Applicants’ invention, it is noted that the features upon which Applicants rely (i.e., input multiple device geometries and electrical bias conditions) are not recited in the rejected claim 1 or claim 5. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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7-4. Applicants' argument (7) is not persuasive. For example, Applicants have admitted at page 5, lines 8-10, "The mismatch tool 10 further comprises the data input and data output interfaces that may be comprised of any data interface method or system". Therefore, using the interface provided in Michael's CAD environment meets the recited "graphical interface" limitation. Furthermore, at page 7, lines 7-9, Applicants have admitted, "The five scenarios above are presented as examples of scenarios popular with those skilled in the art". Because these five scenarios are popular with those skilled in the art, at least, the required input parameters and desired output parameters as well as their format for each scenario are well known. In other words, the combined teachings of Michael et al., Burrows et al., and Applicants' admission meet all the claimed limitations.

Conclusion

8. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
May 9, 2006

H.D.

*May Phan
Thai Phan
Patent Examiner
Art. 2128*